

Chapter 13

>> Efficiency and Equity

Section 1: Supply, Demand, and the Virtues of the Market

Back in Chapter 6 we introduced the concepts of **consumer surplus** and **producer surplus**. Recall that consumer surplus is the difference between what buyers are willing to pay for a good and what they actually pay; it measures the **gains to consumers from participating in the market**. Similarly, producer surplus is the difference between the price that sellers of a good receive and their cost; **it measures the gains to producers from participating in the market**. The **sum of consumer and producer surplus, total surplus**, measures the **gains from trade**: the total benefits to buyers and sellers from participating in the market.

What we learned in that chapter was a remarkable fact: in equilibrium, a perfectly competitive market—a market in which both buyers and sellers are price-takers—is **usually efficient**. That is, in most cases such a market *maximizes total surplus*. Except in cases of **market failure**, there is no way to increase the gains from trade once a market has done its work.

But why is this true, and what are the conditions that make it possible?

To answer these questions, let's briefly look at this story again. It will set the stage for our discussion of efficiency in the economy as a whole.



Why a Market Maximizes Total Surplus

In Chapter 6 we showed that a market maximizes total surplus by considering the alternatives. That is, any attempt to rearrange consumption or production from the market equilibrium reduces total surplus.

How did we demonstrate this result? Figure 13-1 shows, once again, the example of a market in used textbooks. In this example the equilibrium is at E , where the price is \$30, and the quantity bought and sold is 1,000 books. We then laid out the three ways in which you might try to improve on this equilibrium and showed that none of them will succeed:

- **Reallocating consumption.** You might try to increase total surplus by giving books to different consumers. But in equilibrium every consumer who gets a book is to the left of E on the demand curve, and every consumer who does not get a book is to the right of E . That is, every consumer who gets a book has a higher willingness to pay than every consumer who does not get a book. So any reallocation of consumption away from the market equilibrium would reduce the total surplus.
- **Reallocating production.** You might try to increase total surplus by getting different people to sell books. (For simplicity, let's think of sellers as "producing" the books.) But every potential seller who sells a book is to the left of E on the supply curve, and every potential seller who does not sell a book is to the right of E . That is, every potential seller who sells a book has a lower cost than every potential seller who does not. So any reallocation of production away from the market equilibrium would reduce the total surplus.

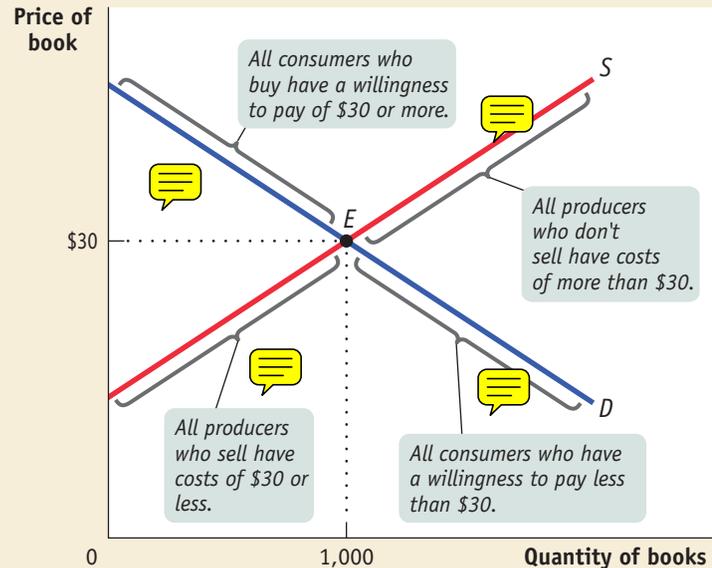
- Changing the level of production. You might try to increase total surplus by either increasing or decreasing the number of books sold. But at point E, the willingness to pay of the last buyer is just equal to the cost of the last seller. So any change in production means either producing a book that is not worth as much to the buyer as it costs to provide or *not* producing a book that is worth more to a consumer than it costs.



Figure 13-1

Why a Market Maximizes Total Surplus

How do we know that total surplus is maximized at the equilibrium price of \$30 per book and the equilibrium quantity of 1,000? First, books go to the “right” consumers: every consumer who buys a book has a willingness to pay of \$30 or more, and every potential consumer who does *not* buy a book has a willingness to pay less than \$30. Second, books are supplied by the “right” producers: every seller who supplies a book has a cost of \$30 or less, and every potential seller who does *not* supply a book has a cost of more than \$30. Finally, the “right” quantity of 1,000 books are bought and sold: any additional books would cost more than \$30 to produce but would be worth less than \$30 to the consumers who receive them. If any fewer books were bought and sold, some consumers would be willing to pay more than it costs producers to supply these books.



So we saw in Chapter 6 that when an individual competitive market is in equilibrium, the consumers who are willing to pay the most for a good are the ones who get it; the producers with the lowest cost are the ones who produce it; and the quantity produced and consumed is right, in the sense that producing either more or less would reduce total surplus.

As we'll see in the next section, a similar case for efficiency applies to the economy as a whole. But before we lay out that case, let's look at the reasons why a market manages to get so much right.



Why Markets Work So Well: Property Rights

Economists can say and have said volumes about why markets are an effective way to organize an economy. **But the effectiveness of markets comes down largely to the power of two features of a well-functioning market: *property rights* and the role of prices as *economic signals*.**

By **property rights** we mean a system in which valuable items in the economy—whether they are resources or goods—have **specific owners who can dispose of them as they choose**. Property rights are what make the mutually beneficial transactions in the used-textbook market, or any market, possible.

To see why property rights are crucial, imagine that students do not have full property rights in their textbooks—that they are not allowed to resell books when the semester is over.

This restriction on property rights would prevent many mutually beneficial transactions. Some students would be stuck with textbooks they do not plan to reread and would be happier receiving some cash instead. Other students would be forced to pay full price for shiny new books when they would be happier getting slightly battered copies at a lower price.

Property rights are the rights of owners of valuable items, whether resources or goods, to dispose of those items as they choose.



In Chapter 20, we'll see that some of the major ways in which markets go wrong have to do with a lack of clearly defined property rights in valuable goods such as fish in the sea and clean air.

Why Markets Work So Well: Prices as Economic Signals

An **economic signal** is any piece of information that helps people make better economic decisions.



Because well-defined property rights give individuals the right to engage in mutually beneficial trades, the second necessary feature of well-functioning markets—economic signals—tell individuals *which* trades are mutually beneficial. An **economic signal** is any piece of information that helps people make better economic decisions. There are thousands of signals that businesses watch in the real world. For example, business forecasters say that sales of cardboard boxes are a good early indicator of changes in industrial production: if businesses are buying lots of cardboard boxes, you can be sure that they will soon increase their production.

But prices are far and away the most important signals in a market economy, because they convey essential information about other people's costs and their willingness to pay. If the equilibrium price of used books is \$30, this in effect tells everyone both that there are consumers willing to pay \$30 and up and that there are producers with a cost of \$30 or less.



The signal given by the market price is what ensures that total surplus is maximized, by telling people whether to buy or sell books. If the price of a book is \$30, any consumer who would not be willing to pay \$30 knows that there are other consumers who are willing to pay more; any producer whose cost is more than \$30 knows that there are other producers with lower costs. And consumers who *are* willing to pay \$30 or more, like producers with costs of \$30 or less, are in effect told that it is a good idea for them to consume and produce.

Why Markets Sometimes Don't Work Well: Market Failure



We'll want to keep these two crucial features of competitive markets—property rights and prices as economic signals—in mind in later chapters when we analyze in detail how markets sometimes fail. It's worth revisiting the caution found in Chapter 6 about cases of market failure—the situation in which a market fails to maximize total surplus. **First**, markets can fail when one party, in an attempt to capture more resources, prevents mutually beneficial trades from occurring. **Second**, markets can fail when actions have side effects on others that aren't properly taken into account by the market—side effects like pollution. **Finally**, markets can fail because some goods, by their very nature, are unsuited for efficient management by markets. We will see in the next section how all three of these cases can be interpreted as instances in which prices give incorrect signals—that is, they fail to help people make better economic decisions. And as we will discover shortly, the failure of a particular market in an economy has implications for how well the entire economy operates. ■

